

REMARKS

Claims 1-20 are pending in this application. Claims 14-16 are subject to restriction and have been withdrawn by the Examiner. Claims 1, 11, 13 and 17 are independent.

Claims 17-20 are objected to on informality grounds. The objection is respectfully traversed.

In claim 17, it is suggested that the phrase "formed of" be modified to read --formed from--. However, it is respectfully submitted that the first polycrystalline silicon layer of claim 17 is recited as intended. That is, as disclosed, the polycrystalline silicon layer is formed of an amorphous silicon layer and a metal catalyst element. Accordingly, the invention is recited as intended in claim 17.

Claims 1, 3-5, 7 and 17-20 stand rejected under 35 USC §102(a) as anticipated by Guliants, et al. (Photovoltaic Specialists Conference, 15-22 September 2000, IEEE, pages 154-157). Claim 2 stands rejected under 35 USC §103(a) as obvious over Guliants, et al. Claims 6 and 8-13 stand rejected under 35 USC §103(a) as obvious over Guliants, et al. in view of Okamoto, et al. (U.S. Patent No. 6,337,224). The rejections are respectfully traversed.

In the response to arguments on pages 7 and 8 of the final official action dated June 4, 2003, the arguments submitted in traversal of the prior art rejection on the same grounds are addressed only in part. More particularly, in the Amendment filed on February 12, 2003, independent claims 1, 11 and 13 were amended, *inter alia*, to recite that the second polycrystalline layer has been formed without catalytic affect.

This means that structurally, the p-n junction or p-n junction forming layer

(generating layer) does not include Ni in accordance with the invention as recited in claims 1, 11 and 13. This must be contrasted with the teachings of Guliants which discloses the formation of the solar cell generating layer by metal induced growth (MIG). Accordingly, Guliants' structure must necessarily had a p-n junction or p-n junction forming layer (generating layer) which includes Ni (see page 156, right column and page 157, left column).

Accordingly, it is respectfully submitted that the present invention as recited in independent claims 1, 11 and 13 is structurally distinguishable from that which is disclosed by Guliants. Furthermore, Okamoto, et al. is not cited for and does not cure the deficiency in Guliants' structure.

Claim 17 recites a second polycrystalline silicon layer which is formed using the first polycrystalline silicon layer as a seed crystal. It is respectfully submitted that this recitation likewise limits the p-n junction or p-n junction forming layer (generating layer) of the recited structure to one which does not include Ni. Accordingly, claim 17 is also distinguishable over the applied prior art.

Furthermore, it is respectfully submitted that limitations recited in the dependent claims further clarify the differences in the structures of the present invention and the applied art.

For example, claim 18 recites that the second polycrystalline layer is formed by plasma CVD. As discussed in a prior response, using plasma CVD, the Ni included in the seed crystal does not act as a catalyst, as would be well understood in the art. That is, the upper generating layer can be formed using a substrate temperature of 200°C. On the other hand, for the Ni to act as a catalyst element requires a temperature

around 525°C. Claim 19 recites that the second polycrystalline silicon layer is formed at a temperature of approximately 300°C or less. Once again, at this temperature the Ni included in the seed crystal would not act as a catalyst. Thus necessarily meaning that the generating layer does not include Ni.

Claim 20 explicitly recites that the second polycrystalline silicon layer is formed without the metal catalyst element and the first polycrystalline silicon layer acts as a seed crystal in the formation of the second polycrystalline layer. Here again, this necessarily means that the present invention is structurally different than that described in the applied prior art. That is, in Guliant the second polycrystalline silicon layer is necessarily formed with a metal catalyst element acting as a catalyst in its formation. This necessarily results in the generating layer and p-n junction having metal contamination (such as Ni contamination) and therefore degraded characteristics.

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance and an early indication of the same is courteously solicited. The Examiner is respectfully requested to contact the undersigned by telephone at the below listed local telephone number, in order to expedite resolution of any remaining issues and further to expedite passage of the application to issue, if any further comments, questions or suggestions arise in connection with the application.

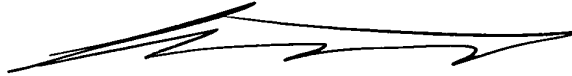
To the extent necessary, Applicants petition for an extension of time under 37 CFR § 1.136. Please charge any shortage in fees due in connection with the filing of

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this paper, including extension of time fees, to the Deposit Account No. 01-2135
(Case No. 521.41463X00) and please credit any excess fees to such Deposit Account.

Respectfully submitted,

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